



Skills Framework for Intellectual Property

A Guide to Occupations and Skills

An initiative of

SKILLSfuture

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About the Skills Framework

The Skills Framework is a SkillsFuture initiative developed for the Singapore workforce to promote skills mastery and lifelong learning. Developed by SkillsFuture Singapore, Workforce Singapore and the Intellectual Property Office of Singapore together with employers, industry associations, education and training providers, the Skills Framework for Intellectual Property provides useful information on:



With the Skills Framework, individuals are equipped to make informed decisions about career choices, as well as take responsibility for skills upgrading and career planning.



Assess Career Interests

- Understand career pathways
- Recognise personal attributes required



Prepare for Desired Jobs

- Understand skills and competencies required



Find Avenues to Close Skills Gap

- Identify relevant training programmes to equip oneself with the required skills and competencies
- Participate in on-the-job training opportunities provided by companies



Renew, Upgrade and Deepen Skills

- Plan for career development/transition
- Recognise skills and competencies required for the intended job role
- Identify training programmes to upgrade and deepen skills



Sector Outlook for Intellectual Property

It all begins with an idea. Machine-learning applications that perform medical diagnostics without extensive equipment; automotive technologies that improve your driving experience; smart homes where almost all systems can be remotely controlled – all these started as concepts in someone’s mind. Bringing ideas to reality involves innovation, and commercialisation of intangible assets¹ and intellectual property (IP)² developed by individuals and enterprises.

Intangible assets are increasingly becoming a significant component of enterprise value. An oft-cited study estimates intangible assets to comprise 84% of the total market value of S&P 500 companies in 2015, a complete reversal from the 17% total market value in 1975³. Globally, the value of intangible assets in enterprises has tripled over the past decade to almost US\$50 trillion (S\$68 trillion) in 2016 – equivalent of about two-thirds of the global gross domestic product⁴. This shows that enterprises are shifting away from using traditional tangible assets to intangible assets, including IP, to drive their growth.

IP and the Singapore Narrative

Leveraging innovation and IP to drive growth is a strategy deployed by many nations, including Singapore. Since our independence, our nation has invested S\$70 billion in public research and development (R&D). The most recent tranche of funding was the S\$19 billion committed under the Research, Innovation and Enterprise 2015-2020 plan to develop an innovation-driven economy. Given the significant investment in R&D, the Committee on the Future Economy (CFE) presented a report in 2017, inter alia, recommended the strengthening of the ecosystem and capabilities for commercialisation of research findings and IP to capture value.

¹Intangible assets refer to assets that are not physical in nature. This includes brands, goodwill, know-how, data, and intellectual property.

²Intellectual property refers to the legally protected subset of intangible assets such as patents, trade marks, registered designs, copyright, trade secrets, and geographical indications.

³Intangible Asset Market Value Study 2017, Ocean Tomo LLC.

⁴US\$15.5 trillion in 2008 to over US\$47 trillion in 2016, Source: Brand Finance Global Intangible Finance Tracker (GIFT™) 2017.

Role of IP Professionals in Driving Innovation



Today, IP professionals play a key role across all industries in helping individuals and enterprises commercialise their innovation:

- IP lawyers and legal associates handle legal issues pertaining to intangible assets and IP, and are key advisors in areas such as risk management, and handling litigation challenges. They also play a key role in negotiation of IP sales or licensing;
- Patent attorneys/agents and trade mark agents translate enterprise ideas and branding into IP rights. These IP rights serve as assets enabling companies to establish a key comparative advantage and freedom to operate in various markets;
- IP managers are skilled in managing a wide spectrum of intangible assets, i.e. brands, content, data, trade secrets, and oversee the IP portfolio management activities to optimise business value; and
- IP strategists devise the deployment of IP rights in key markets central to corporate strategy, to help companies scale and capture market share, and are also adept at identifying and transacting IP rights.

The value that IP professionals bring to the table has been recognised by their employers, with IP jobs commanding a premium of almost 30% more in wages compared to roles that do not work with IP⁵.

⁵Update to the Intellectual Property Hub Master Plan, Intellectual Property Office of Singapore, May 2017.

Moving Forward

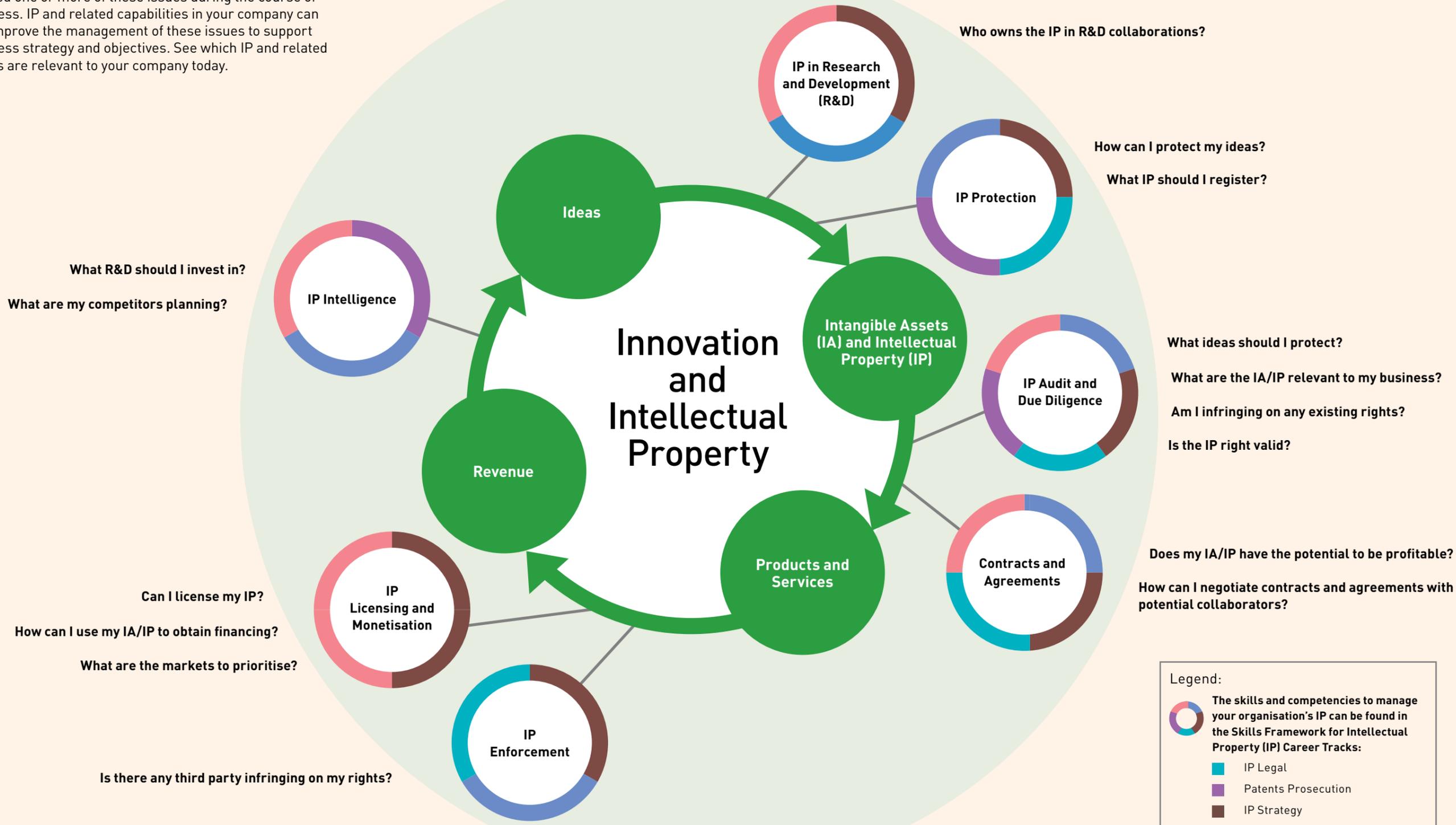


Currently, the IP sector in Singapore is fairly developed, with an experienced pool of professionals supported by associations such as the International Association for the Protection of Intellectual Property (AIPPI), the Asian Patent Attorneys Association (APAA), the Association of Singapore Patent Attorneys (ASPA), the Law Society of Singapore (LawSoc) and the Licensing Executives Society Singapore (LES Singapore).

The roles that these professionals have in driving the next phase of economic growth will become more important. Besides the emphasis on IP commercialisation in the 2017 CFE Report, the IP Hub Master Plan updated in the same year sets out increasing the number of IP professionals and jobs as a priority area. These professionals, when equipped with deeper IP and commercially-oriented skillsets, will be able to deliver better value for individual and enterprise innovators.

Enhance Your Organisation's Competitive Edge

Have you ever encountered these issues? If you have applied innovation in your business in any way, chances are you had encountered one or more of these issues during the course of your business. IP and related capabilities in your company can help you improve the management of these issues to support your business strategy and objectives. See which IP and related capabilities are relevant to your company today.



Legend:

The skills and competencies to manage your organisation's IP can be found in the Skills Framework for Intellectual Property (IP) Career Tracks:

- IP Legal
- Patents Prosecution
- IP Strategy
- IP Management
- IP Commercialisation

Source: Intellectual Property Office of Singapore, 2019

Career Tracks



IP Legal

The IP Legal track involves the provision of advice on IP registrability, infringements and litigation to organisations and/or clients.

This involves the drafting and preparation of applications for IP registration, which may also include responding to office actions issued by IP offices and representing organisations and/or clients in litigation and enforcement matters, including alternative dispute resolution, such as mediation, arbitration and expert determination.



Patents Prosecution

The Patents Prosecution track involves the handling of patent-related matters for organisations and/or clients.

This involves providing advice on patent registrability, potential infringements and validity and drafting of documents needed to file patents on behalf of the organisations and/or clients, proposing responses to examiner's written opinions and/or office actions and working closely with the IP Legal functions on patent-related litigation matters.



IP Strategy

The IP Strategy track involves the development and implementation of overall IP strategies and policies in support of the organisation's broader corporate strategy.

This involves the planning and management of the organisation's entire IP portfolio, identification of risks regarding IP assets and opportunities to commercialise IP assets to achieve business outcomes.



IP Management

The IP Management track involves the curation and management of the IP portfolio of the organisation.

This involves the drafting and preparation of applications for IP registration, due diligence checks, providing advice on IP-related opportunities and risks across business units and recommendations on maintenance of IP registrations.



IP Commercialisation

The IP Commercialisation track leads the commercialisation of the organisation's IP (including scientific and technological advances) into marketable products, services or companies.

This involves building business relationships with key internal and external stakeholders and seeking out opportunities to commercialise the organisation's IP, providing advice on business strategies from the IP aspect and being involved in the launch of start-up companies that utilise the organisation's IP if required.

Skills in Demand

As the role of IP professionals evolves, those seeking successful careers in IP can set themselves apart by acquiring these skills.



Business Environment Analysis

Analyse data pertaining to the business landscape and environment, including competitor-analysis



Business Risk Management

Forecast and assess existing and potential risks which impact the operation and/or profitability to the business as well as develop and roll out company-wide strategies and processes to mitigate risks, minimise their impact or effectively manage such business risks



Data Visualisation

Implement contemporary techniques, dynamic visual displays with illustrative and interactive graphics to present patterns, trends, analytical insights from data or new concepts in a strategic manner for the intended audience



IP Commercialisation and Exploitation

Develop and execute intellectual property marketing and/or exploitation strategies



IP Licensing

Execute and manage intellectual property licensing strategies



IP Monetisation

Analyse intellectual property-related taxation and valuation reports, and determine financing structure for intellectual property



Market Entry Strategy Formulation

Develop strategic plans to enter identified markets based on assessed costs, benefits and risks involved

Desired Attributes

A career in IP provides opportunities for individuals seeking rewarding and enriching careers. If you have the following attributes, enjoy embracing new ideas and working in a fast-paced environment, a career in IP offers you excellent opportunities to develop your passion and grow your career.



Analytical

Think through issues in a logical and critical manner



Business Acumen

Apply industry and business specific knowledge and regulations to job scope



Communication

Articulate ideas and concepts effectively



Meticulous

Pay attention to details and accuracy



Resourceful

Manage resources efficiently and effectively to achieve business outcomes



Teamwork

Work well with others to achieve common objectives

Take Your Career Further



FOR INDIVIDUALS

MySkillsFuture

MySkillsFuture is a one-stop online portal that enables Singaporeans to chart their own career and lifelong learning pathways, through access to industry information and tools to search for training programmes to broaden and deepen skills.

SkillsFuture Credit

This initiative aims to encourage individuals to take ownership of their skills development and lifelong learning. All Singaporeans aged 25 years and above will receive an opening credit of \$500 which will not expire.

SkillsFuture Fellowships

Monetary award of \$10,000 to recognise Singapore Citizens with deep skills, who are champions of lifelong learning, and committed to contributing to the skills development of others.

SkillsFuture Mid-Career Enhanced Subsidy

Singaporeans aged 40 years and above will receive higher subsidies of up to 90% of course fees for over 8,000 SSG-supported courses, and at least 90% of programme cost for Ministry of Education-subsidised full-time and part-time courses.

SkillsFuture Qualification Award

This award recognises the efforts of Singapore Citizens in attaining WSQ full qualifications, which equip them with comprehensive and robust sets of skills to perform their jobs competently, pursue career progression and explore new job opportunities.

SkillsFuture Series

The SkillsFuture Series is a curated list of short, industry-relevant training programmes that focus on emerging skills.

SkillsFuture Study Awards

This is a monetary award of \$5,000 for adults in their early and mid-career to develop and deepen their skills in future growth clusters.

Initiatives and Schemes by:



SkillsFuture Singapore (SSG)

More information on schemes listed above can be found at www.skillsfuture.sg

Take Your Career Further



FOR INDIVIDUALS AND EMPLOYERS

SkillsFuture for Digital Workplace

SkillsFuture for Digital Workplace is structured as a two-day training programme that will equip Singaporeans with basic digital skills required at the workplace and in their daily lives.

Career Support Programme (CSP)

CSP provides salary support for employers to defray the costs of recruiting mid-career switchers with the requisite abilities and experience, but who might command a higher salary that employers might otherwise be unable to offer.

Career Trial

Career Trial helps individuals take on short term work trials to allow them to explore a new job in a different industry before committing to permanent employment, and concurrently allows employers to assess the jobseekers' job fit.

Professional Conversion Programme (PCP)

The Professional Conversion Programme is a placement programme that assists PMETs in re-skilling to switch careers, and take on new jobs that are in demand and in industries with good career prospects.

P-Max

P-Max facilitates PMETs to explore career opportunities with Small and Medium-sized Enterprises (SMEs), and helps SMEs recruit interested PMETs.

Initiatives and Schemes by:



SkillsFuture Singapore (SSG)

More information on schemes listed above can be found at www.skillsfuture.sg

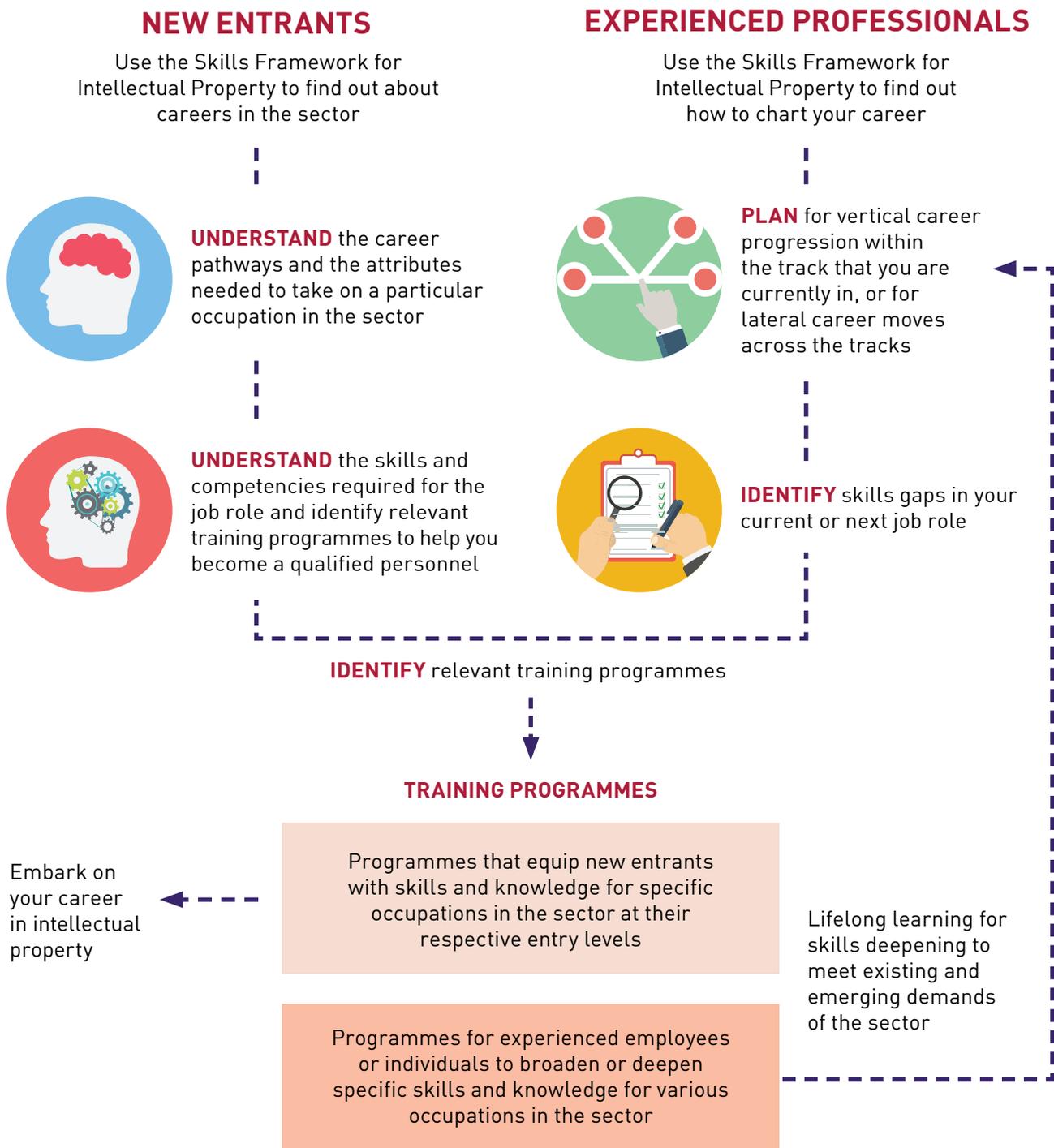


Workforce Singapore (WSG)

More information on schemes listed above can be found at www.wsg.gov.sg

Realise Your Potential - Take the Next Step Forward

Now that you have some idea of what a career in the intellectual property sector can offer and the available government initiatives and schemes to support your career goals, you are ready to take the next step!



For a list of training programmes available for IP, please visit:
skillsfuture.sg/skills-framework/intellectual-property

Skills Map



IP LEGAL
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PATENTS PROSECUTION
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IP STRATEGY
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IP MANAGEMENT
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IP COMMERCIALISATION
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IP Legal



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Partner

Jevon Louis
Ravindran Associates LLP

DRIVING THE ECONOMY WITH IP

Intellectual property (IP) has become increasingly important as Singapore shifts to an innovation-based and digital economy, says Jevon Louis, Partner at Ravindran Associates LLP. As an IP lawyer, Jevon helps companies develop IP strategies that enable them to identify, manage and commercialise their IP assets, thereby supporting the business' overall commercial objectives.

Over the last 15 years, Jevon has seen the IP ecosystem evolve in tandem with Singapore's economic growth. While in the past, Jevon had to convince companies of the need to allocate a budget for developing IP assets, his role has gradually shifted to that of advising companies how to strategically deploy their IP assets to achieve their commercial aims.

An IP asset should no longer be viewed predominantly as a legal right, but must also be recognised as a business asset that is an integral part of a larger business strategy. He adds that understanding the role of IP assets in a business is important not just in high-technology industries, but also in sectors like advertising, marketing, product, graphic and fashion design, entertainment, music and other creative arts.

While Jevon is glad that companies are beginning to prioritise the development, management, commercialisation and exploitation of IP assets, he notes that this has also led to a gap in skills in the IP industry. IP practitioners like IP paralegals are increasingly leveraging on technology in their work, and there is an overall need to shift the mindset of IP practitioners on the whole. This means that IP practitioners will have to move up the value chain – to acquire skills in data analysis, and to be

"IP practitioners will have to move up the value chain – to acquire skills in data analysis, and to be more commercially-minded by developing a deeper understanding of different business models."

more commercially-minded by developing a deeper understanding of different business models.

The Skills Framework for IP will play an important role in facilitating this shift, Jevon says. He recalls when he started out in the IP sector almost 15 years ago with a background in mechanical engineering. His aim was to become a patent attorney, but he struggled to plan his career route. Then, he referenced the American patent attorney profession model to guide him on the skills he would need, such as having a deeper understanding of commercial and contract law to complement his existing technical skillset as a patent attorney. That led Jevon to pursue a graduate law degree at a local university enabling him to be called to the Singapore Bar. Now, as a registered patent attorney and IP lawyer, Jevon is able to advise and support his clients from both an IP and business perspective, as well as represent them in IP disputes before Singapore's courts.

Now, Jevon says, newcomers embarking on a career in IP have the Skills Framework for IP as a guide to determine the routes to take and the skills they need in a focused manner. Existing IP practitioners can also use it to better understand their current roles and the career progression open to them in the future.

It is imperative, Jevon asserts, for those in the IP sector, or intending to enter the IP sector, to embrace the concept of lifelong learning. "With the upgrading of skills, deepening of knowledge and broadening of capabilities, those in the IP sector will also find themselves better positioned and equipped for taking on roles or tasks of greater responsibility or complexity," he concludes.

IP Paralegal/IP Executive

JOB ROLE DESCRIPTION

The Intellectual Property Paralegal/Intellectual Property Executive files intellectual property (IP) applications relating to patents, trade marks and/or registered designs, and manages copyright-related matters. He/She is able to conduct research and prepares documents for IP-related prosecution. He also documents negotiation outcomes for management's information and complies with professional rules of conduct in his engagement with key stakeholders.

He prepares budget reports based on expenses incurred and participates in professional development activities to keep abreast of legal and regulatory developments. He plays a pivotal role in maintaining the organisation's IP portfolio and handling legal correspondence to ensure that deadlines and timelines are adhered to compliance with legal and organisational procedures.

He has a good understanding of local IP-related legislation and regulatory requirements. He has excellent communication skills and is able to work with different levels of management and stakeholders, and takes the initiative to draft legal correspondence for standard matters. He is also able to multi-task with large volumes of work while balancing competing priorities of deadlines for various IP-related portfolios.

CRITICAL WORK FUNCTIONS AND KEY TASKS	CRITICAL WORK FUNCTIONS	KEY TASKS
	Produce intellectual property (IP)-related documents	<ul style="list-style-type: none"> • File IP applications with regulatory authorities in compliance with IP legislation and guidelines • Conduct investigations and legal research on IP-related legislation and guidelines to assist in IP applications • Assist in preparation of documentation for IP prosecution • Work with internal stakeholders and external vendors to collate research on legal opinions and documents • Support the implementation of IP processes based on established workflows • Assist in drafting contracts for new IP applications
	Uphold professionalism and ethical standards	<ul style="list-style-type: none"> • Identify and communicate ethical dilemmas to supervisors • Comply with professional rules of conduct and standards • Keep abreast of changes in professional rules of conduct and standards
	Oversee the organisation's IP portfolio and intangible assets	<ul style="list-style-type: none"> • Assist in conducting analyses of IP portfolios to optimise and maximise value from the IP portfolios • Assist in conducting IP due diligence • Maintain oversight over all IP-related deadlines and ensure renewals and filings comply with stipulated timelines • Ensure all legal correspondence are attended to and filed in accordance with legal and organisational requirements • Perform legal, business and investigative research to facilitate commercialisation, creation and application of IP assets • Analyse local market trends and developments to distil insights on IP-related trends and present findings to management • Follow up with and manage contracts and IP lifecycles

IP Paralegal/IP Executive

CRITICAL WORK FUNCTIONS AND KEY TASKS	CRITICAL WORK FUNCTIONS	KEY TASKS
		Contribute to organisational function and strategies
	Support business development activities	<ul style="list-style-type: none"> • Conduct research on potential business partners • Document outcomes from negotiations and business development meetings • Prepare business proposals for management's evaluation • Maintain relationships with stakeholders

SKILLS AND COMPETENCIES	TECHNICAL SKILLS AND COMPETENCIES		GENERIC SKILLS AND COMPETENCIES (TOP 5)	
		Budgeting	Level 3	Communication
	Business Data Analysis	Level 2	Teamwork	Basic
	Business Environment Analysis	Level 3	Interpersonal Skills	Intermediate
	Business Opportunities Development	Level 2	Digital Literacy	Advanced
	Business Negotiation	Level 3	Problem Solving	Basic
	Business Presentation Delivery	Level 3		
	Change Management	Level 3		
	Data Visualisation	Level 3		
	Intellectual Property in Business	Level 3		
	Intellectual Property Licensing	Level 3		
	Intellectual Property Management Processes	Level 3		
	Intellectual Property Portfolio Management	Level 3		
	Market Research	Level 2		
	Networking	Level 3		
	Organisational Strategy and Policy Realisation	Level 3		
	Patent Claim and Specification Drafting	Level 3		
	People Change Management	Level 3		
	People and Performance Management	Level 3		
	Project Management	Level 3		
	Registered Design Application	Level 3		
	Trade Mark Application	Level 3		

The information contained in this document serves as a guide.

Senior IP Legal Associate/IP Legal Associate

JOB ROLE DESCRIPTION

The Senior Intellectual Property Legal Associate/Intellectual Property Legal Associate advises the organisation and/or clients on intellectual property (IP)-related issues related to registrability, infringements and litigation. He/She also assists in IP-related negotiations, contracts or agreements while ensuring compliance to regulatory requirements and upholding professional standards. He assesses IP-related infringements to recommend suitable dispute resolution methods.

The Senior IP Legal Associate/IP Legal Associate coaches the legal team and ensures adherence to ethical guidelines and regulatory requirements. He maintains a network within the IP community and is able to identify business opportunities and/or growth areas for the organisation and/or clients. He keeps abreast of how public policy issues impact the organisation, and as a Senior IP Legal Associate, is able to assess the impact of the public policy issues on the organisation and propose initiatives to manage and/or mitigate the impact.

The Senior IP Legal Associate/IP Legal Associate possesses sound knowledge of the legislation underpinning IP. He possesses excellent written and communication skills to negotiate, mediate and/or litigate IP-related issues on behalf of the organisation and/or clients. He should have an awareness of how digital trends will impact legal work, and as a Senior IP Legal Associate, has the ability to articulate and translate these trends into new initiatives for his organisation. He is required to fulfil the requirements of being a 'qualified person' as defined in the Legal Profession Act read together with the Legal Profession (Qualified Persons) Rules and should fulfil other admission requirements set out in Sections 12 and 13 of the Legal Profession Act read together with the Legal Profession (Admission) Rules 2011.

CRITICAL WORK FUNCTIONS, KEY TASKS AND PERFORMANCE EXPECTATIONS	CRITICAL WORK FUNCTIONS	KEY TASKS	PERFORMANCE EXPECTATIONS
	Conduct intellectual property (IP) prosecution	<ul style="list-style-type: none"> • Review and formalise specifications for IP applications • Review responses to examiners' objections • Draft potential responses to the registrability of IP • Conduct and manage IP due diligence and audits • Act as an internal advisory on IP policies and due diligence • Advise on and manage the commercialisation of IP assets • Advise on and manage IP creation and application matters • Advise on and manage IP acquisition and financing transaction matters 	In accordance with: <ul style="list-style-type: none"> • Requirements of being a 'qualified person' as defined in the Legal Profession Act read together with the Legal Profession (Qualified Persons) Rules; and • Other admission requirements set out in Sections 12 and 13 of the Legal Profession Act read together with the Legal Profession (Admission) Rules 2011
	Uphold professionalism and ethical standards	<ul style="list-style-type: none"> • Analyse ethical dilemmas and communicate them to senior management • Determine appropriate courses of action to address ethical dilemmas • Ensure compliance with professional rules of conduct and standards • Uphold professional and ethical standards of the team 	

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Senior IP Legal Associate/IP Legal Associate

CRITICAL WORK FUNCTIONS, KEY TASKS AND PERFORMANCE EXPECTATIONS	CRITICAL WORK FUNCTIONS	KEY TASKS	PERFORMANCE EXPECTATIONS
	Perform contract negotiations and advisory	<ul style="list-style-type: none"> • Manage negotiations with existing clients • Assist in negotiation of IP licences and agreements • Manage conflict involving a range of internal and external stakeholders 	
	Manage IP-related contentious issues	<ul style="list-style-type: none"> • Conduct appellate and trial advocacy of IP-related issues • Provide inputs to the organisation's strategy for IP-related contentious issues • Represent clients in alternative dispute resolution settings on IP disputes • Review and/or draft legal opinions and documents • Advise on suitability of IP dispute resolution mechanisms 	
	Manage people and organisational function	<ul style="list-style-type: none"> • Manage continuing professional development activities • Provide on-the job training and coaching for staff • Develop frameworks and processes to facilitate continuous improvement and innovation initiatives • Set individual objectives and assess performance of staff • Manage budget and resource allocation for the function's activities • Provide inputs for manpower allocation based on department needs • Develop workplans and targets in line with the organisation's strategy and business function 	
	Manage business development activities	<ul style="list-style-type: none"> • Establish and maintain a network of key stakeholders and experts in the local IP community • Identify and develop business opportunities for IP practice • Maintain the organisation's and/or clients' IP portfolio in accordance with regulatory requirements 	

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Senior IP Legal Associate/IP Legal Associate

CRITICAL WORK FUNCTIONS, KEY TASKS AND PERFORMANCE EXPECTATIONS	CRITICAL WORK FUNCTIONS	KEY TASKS	PERFORMANCE EXPECTATIONS
		Manage impact of emerging trends on IP-related work	<ul style="list-style-type: none"> • Synthesise and provide market and/or industry information to assist decision making for IP portfolio development • Identify opportunities for automation and simplification of legal work processes • Analyse data to evaluate the effectiveness of automation on legal work processes • Keep abreast of new technologies that may impact the organisation's legal work processes

SKILLS AND COMPETENCIES	TECHNICAL SKILLS AND COMPETENCIES		GENERIC SKILLS AND COMPETENCIES (TOP 5)	
		Budgeting	Level 4	Communication
	Business Data Analysis	Level 3, Level 4	Problem Solving	Advanced
	Business Negotiation	Level 4, Level 5	Creative Thinking	Intermediate
	Business Opportunities Development	Level 3, Level 4	Interpersonal Skills	Intermediate
	Change Management	Level 4, Level 5	Decision Making	Intermediate
	Contracts and Agreements	Level 4		
	Copyright Protection	Level 5		
	Intellectual Property Audit and Due Diligence	Level 4, Level 5		
	Intellectual Property Enforcement	Level 4		
	Learning and Development	Level 4, Level 5		
	Manpower Forecasting	Level 4		
	Networking	Level 4, Level 5		
	Organisational Strategy and Policy Realisation	Level 4, Level 5		
	People Change Management	Level 4, Level 5		
	People and Performance Management	Level 4, Level 5		
	Registered Design Application	Level 4, Level 5		
	Trade Mark Application	Level 4, Level 5		

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Partner/Director/Counsel

JOB ROLE DESCRIPTION

The Partner/Director/Counsel oversees the approval of intellectual property (IP)-related submissions and legal drafting work, while ensuring compliance to legal and regulatory requirements and adherence to ethical and professional codes of conduct. He/She also provides advice and guidance in complex and/or novel IP creation, application and commercialisation matters. He leads negotiations to resolve IP-related disputes, and leads litigation and dispute resolution efforts in the event of non-resolution.

The Partner/Director/Counsel oversees a team to ensure that organisational targets and Key Performance Indicators (KPIs) are communicated and achieved. He leads the talent management and development function for the team and mentors others in legal-related issues. He builds on and grows the organisation's network and is able to identify new areas of growth for the organisation and/or clients to explore. He also oversees the implementation of technology-driven solutions to enhance the productivity and legal processes of the organisation.

The Partner/Director/Counsel has a sound grasp of local and international IP-related legislation and guidelines and is a subject matter expert in the area who is consulted in complex situations. As an expert in his field, he may be called upon to provide opinions and to share his expertise at public forums. He is an excellent communicator, and is able to balance the interests of the organisation and clients while ensuring compliance to legal regulations and requirements. He may be required to work long hours and travel for business.

CRITICAL WORK FUNCTIONS AND KEY TASKS	CRITICAL WORK FUNCTIONS	KEY TASKS
	Conduct intellectual property (IP) prosecution	<ul style="list-style-type: none"> • Approve IP applications for submission to relevant authorities • Respond to examiners' objections on registrability • Advise clients on registrability of IP • Develop risk mitigating strategies for potential IP infringements and enforcements • Oversee adherence to IP policies and due diligence • Lead complex or novel commercialisation of IP assets • Lead complex or novel IP creation and application matters • Lead complex or novel IP acquisition and financing transaction matters
	Uphold professionalism and ethical standards	<ul style="list-style-type: none"> • Formulate the organisation's strategy for managing ethical dilemmas • Provide overall guidance on professional conduct and code of ethics • Oversee the team's compliance with professional rules of conduct and standards • Ensure the team maintains high professional and ethical standards
	Perform contract negotiations and advisory	<ul style="list-style-type: none"> • Lead negotiations on specific terms of client engagements • Advise on complex IP-related transactions and negotiations • Endorse agreements arising from conflict resolution negotiations

The information contained in this document serves as a guide.

Partner/Director/Counsel

CRITICAL WORK FUNCTIONS AND KEY TASKS	CRITICAL WORK FUNCTIONS	KEY TASKS
	Manage IP-related contentious issues	<ul style="list-style-type: none"> • Adjudicate complex IP disputes in arbitral, binding adjudication or statutory adjudication settings • Formulate the organisation's strategy for IP-related contentious issues • Perform settlement of complex IP disputes in mediation and negotiation settings • Lead the litigation of highly complex or novel IP disputes involving multiple parties and jurisdictions • Review outcomes of cases undergoing IP arbitration and mediation to recommend suitable course of action
	Manage people and organisational function	<ul style="list-style-type: none"> • Develop initiatives to support the continuing competence and professional development of the team • Drive a culture of continuous improvement and innovation • Establish long-term objectives for the talent management function in alignment with the organisation's strategy • Mentor current and future organisation leaders through collaborative leadership practices and career discussions • Drive performance management practices within the department in accordance with organisational policies and procedures • Establish the budget, manpower and resourcing strategies and plans to support the organisation's strategy • Communicate performance indicators and implement supporting policies to facilitate the performance of the organisation
	Manage business development activities	<ul style="list-style-type: none"> • Provide subject matter expertise on legal-related issues within the organisation and at public forums • Cultivate business and professional networks internationally • Formulate the organisation's business development strategies and negotiation limits • Build the organisation's or clients' IP portfolios • Formulate IP-related business solutions and strategies
	Manage impact of emerging trends on IP-related work	<ul style="list-style-type: none"> • Explore methods to leverage on IP intelligence to enhance the organisation's IP strategy • Build new capabilities for IP-related search and analytics functions • Monitor developments to explore new technology and/or analytics functions to enhance productivity and workflow • Evaluate, define and prioritise opportunities for automation and simplification of legal processes in the organisation

Partner/Director/Counsel

SKILLS AND COMPETENCIES	TECHNICAL SKILLS AND COMPETENCIES		GENERIC SKILLS AND COMPETENCIES (TOP 5)	
		Budgeting	Level 5	Leadership
	Business Data Analysis	Level 5	Communication	Advanced
	Business Negotiation	Level 6	Problem Solving	Advanced
	Business Opportunities Development	Level 5	Decision Making	Advanced
	Change Management	Level 6	Interpersonal Skills	Advanced
	Contracts and Agreements	Level 5		
	Copyright Protection	Level 6		
	Intellectual Property Audit and Due Diligence	Level 6		
	Intellectual Property Enforcement	Level 5		
	Learning and Development	Level 6		
	Manpower Forecasting	Level 5		
	Networking	Level 6		
	Organisational Strategy and Policy Realisation	Level 6		
	People Change Management	Level 6		
	People and Performance Management	Level 6		
	Registered Design Application	Level 6		
	Trade Mark Application	Level 6		

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Patents Prosecution



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Patent Executive

Lai Yin Kee (Nikki)

Drew & Napier LLC

TRANSLATING TECHNICAL KNOWLEDGE INTO INTELLECTUAL PROPERTY

After graduating with a degree in Material Science and Engineering, Nikki Lai wandered away from the conventional routes of research and semiconductors, and into the realm of intellectual property (IP).

Admittedly, she knew little about the field – prior to joining Drew and Napier as a Patent Executive, her knowledge was limited to what she remembered from university. It was only while filing and prosecuting patent applications that she grew in both understanding and appreciating IP.

“Take a mobile phone for example: there are patents for hardware, trade marks for protection of the brand, and copyrights for software,” Nikki explains. Observing how these came together showed her how IP was important for companies to improve their market share and gain profit, and how it could set off a cycle of innovation and development.

It also sparked Nikki’s interest in becoming a Patent Agent – a journey that can take between five to six years. She has chosen to embark on the Master of IP and Innovation Management (MIPIM), and to succeed, she must pass four qualifying papers and complete an internship.

“I thought I would give one of the qualifying papers a go first, to see if I would be suited for this career,” Nikki says. Textbooks and past year papers formed the bulk of her learning, and she passed on her first try – a feat that she believes was made possible because of her supervisor’s assistance with the legal terms she was unfamiliar with.

“Now, there is a Skills Framework and it helps you understand what you need easily.”

Support like this is something she has experienced throughout her journey in the IP sector, Nikki recalls. Coming in without legal knowledge, she initially relied on the assistance of colleagues and her supervisor to help her understand this new field.

Back then, there was no structured information to help her plan her career progression. “Now, there is a Skills Framework for IP and the information within makes it very easy to understand what you need,” she says. She is also grateful for the advice and guidance she receives from other experienced IP professionals.

Two semesters into her MIPIM, Nikki has enjoyed the group projects and interactive style of learning the course offers. She has also been able to take various business-related modules, which she credits for improving her understanding of how IP contributes to a company’s overall business strategy. This knowledge has helped her understand her clients’ motivations, in turn enabling her to improve as a patent executive.

Although juggling work and studying can be challenging, Nikki stays motivated with the support of her colleagues and her supervisor. The SkillsFuture Study Award for Intellectual Property sector (SFSA-IP) also helps defray the financial costs of the MIPIM.

She believes that with the increasing importance of IP, the sector is ripe with opportunities, especially for those with a technical background like hers. Even without prior exposure or experience, she has found that skills and knowledge can be picked up – as long as one has passion, and the willingness to ask and learn.

Patent Attorney Trainee/Patent Agent Trainee

JOB ROLE DESCRIPTION

The Patent Attorney Trainee/Patent Agent Trainee assists in the drafting and filing of patent applications under supervision. He/She works closely with inventors and researchers in the process, and also assists in monitoring timelines while ensuring compliance to regulatory requirements and ethical guidelines. He also conducts patent-related searches to facilitate the patent drafting and filing process and liaises with inventors and researchers on the written opinions and/or office actions of the patent examiners.

The Patent Attorney Trainee/Patent Agent Trainee prepares budget reports based on expenses incurred, as well as conducts research into potential business opportunities to facilitate management’s decision making. He also engages in continuous professional development activities to deepen his expertise and knowledge.

The Patent Attorney Trainee/Patent Agent Trainee has a good grasp of local patent regulatory regimes and has good communication skills to establish relationships with key stakeholders, inventors and researchers. He has good written skills to draft technical documents, and is able to understand and interpret scientific and technology-based information.

CRITICAL WORK FUNCTIONS AND KEY TASKS	CRITICAL WORK FUNCTIONS	KEY TASKS
	Manage patent submissions	<ul style="list-style-type: none"> • Review submissions to determine the patentability of inventions • Monitor external parties engaged to conduct patent research, due diligence and analyses • Assist in documentation of inventions in preparation for patent filings • Conduct patent-related searches in preparation for patent filings • Prepare, draft and file patent applications under supervision
	Manage patent amendments	<ul style="list-style-type: none"> • Monitor timelines for responses to examiners’ objections to ensure compliance to regulatory requirements • Liaise with inventors to seek inputs on written opinions or office actions • Collate information to prepare responses to written opinions or office actions
	Manage people and organisational function	<ul style="list-style-type: none"> • Compute statement of expenses for billing purposes • Prepare budget-related reports for management’s information • Participate in continuous professional development activities • Contribute to the development of the team’s objectives and Key Performance Indicators (KPIs)
	Manage business development activities	<ul style="list-style-type: none"> • Implement strategies to leverage relationships and network for business opportunities and partnerships • Maintain collaborative relationships with industry and clients • Collate information on relevant market and industry trends affecting the marketplace • Assist in negotiations and follow up on negotiation outcomes

Patent Attorney Trainee/Patent Agent Trainee

SKILLS AND COMPETENCIES	TECHNICAL SKILLS AND COMPETENCIES		GENERIC SKILLS AND COMPETENCIES (TOP 5)	
		Budgeting	Level 3	Communication
	Business Data Analysis	Level 3	Problem Solving	Intermediate
	Business Negotiation	Level 4	Teamwork	Intermediate
	Business Opportunities Development	Level 3	Interpersonal Skills	Intermediate
	Change Management	Level 4	Sense Making	Intermediate
	Data Visualisation	Level 4		
	Intellectual Property Audit and Due Diligence	Level 4		
	Intellectual Property Management Processes	Level 4		
	Intellectual Property Portfolio Management	Level 4		
	Market Research	Level 3, Level 4		
	Networking	Level 4		
	Organisational Strategy and Policy Realisation	Level 4		
	Patent Claim and Specification Drafting	Level 4		
	Patent Practice	Level 4		
	People Change Management	Level 4		
	People and Performance Management	Level 4		
	Vendor Management	Level 3		

The information contained in this document serves as a guide.

Senior Patent Attorney/Senior Patent Agent/ Patent Attorney/Patent Agent

JOB ROLE DESCRIPTION

The Senior Patent Attorney/Senior Patent Agent/Patent Attorney/Patent Agent files patents on behalf of the organisation and/or clients. To facilitate this, he/she conducts interviews with inventors and researchers to better understand the technology in order to draft specifications, invention abstracts and drawings. He also proposes responses to patent examiners' written opinions and/or office actions while ensuring that regulatory requirements and timelines are adhered to. He liaises closely with internal and/or external litigation counsel on patent-related litigation matters, while providing advice on patent infringements and validity.

The Senior Patent Attorney/Senior Patent Agent/Patent Attorney/Patent Agent coaches others and ensures adherence to ethical guidelines and regulatory requirements. He maintains a network within the intellectual property (IP) community and is able to identify business opportunities and/or growth areas for the organisation and/or clients to explore.

The Senior Patent Attorney/Senior Patent Agent/Patent Attorney/Patent Agent possesses sound knowledge of the science and technology underpinning the inventions. He possesses excellent communication skills when collaborating with inventors and researchers and has the ability to translate technical knowledge for patent submissions. He is required to fulfil the requirements of registration as a patent agent as defined in Rules 6 and 7, Patents (Patent Agents) Rules 2001 and application for a practising certificate as defined in Rule 9, Patents (Patent Agents) Rules 2001.

CRITICAL WORK FUNCTIONS, KEY TASKS AND PERFORMANCE EXPECTATIONS	CRITICAL WORK FUNCTIONS	KEY TASKS	PERFORMANCE EXPECTATIONS
	Manage patent submissions	<ul style="list-style-type: none"> • Assist in the formulation of patent strategies • File patents on behalf of the organisation and/or clients • Conduct interviews with inventors to evaluate invention disclosures and assess its potential for patentability • Conduct due diligence on potential mergers and acquisitions (M&A) and freedom-to-operate assessments, patentability searches and analyses • Draft invention abstracts and drawings to support patent submissions • Conduct patent information searches to avoid infringing other patents filed or granted • Analyse scientific or technical documents to assess if inventions are new and/or innovative • Draft patent specifications in accordance with regulatory requirements 	<p>In accordance with:</p> <ul style="list-style-type: none"> • Registration as a patent agent as defined in Rules 6 and 7, Patents (Patent Agents) Rules 2001; and • Application for practising certificate as defined in Rule 9, Patents (Patent Agents) Rules 2001.

Senior Patent Attorney/Senior Patent Agent/ Patent Attorney/Patent Agent

CRITICAL WORK FUNCTIONS, KEY TASKS AND PERFORMANCE EXPECTATIONS	CRITICAL WORK FUNCTIONS	KEY TASKS	PERFORMANCE EXPECTATIONS
	Manage patent amendments	<ul style="list-style-type: none"> Propose modifications or extensions to the definition of the inventions Amend patent specifications to address written opinions or office actions Assess the pros and cons of filing appeals for rejected patent applications Draft responses to written opinions or office actions to ensure all points are addressed 	
	Provide advice on patent infringements and validity	<ul style="list-style-type: none"> Advise clients on patent infringements and validity Oversee patent-related litigation matters in collaboration with the inventors, researchers and legal team Assist internal and/or external litigation counsel on patent-related litigation matters 	
	Manage people and organisational function	<ul style="list-style-type: none"> Manage continuous professional development activities Provide on-the job training and coaching for staff Develop frameworks and processes to facilitate continuous improvement and innovation initiatives Set individual objectives and assess performance of staff Manage budget and resource allocation for the function's activities Provide inputs for manpower allocation based on department needs Develop workplans and targets in line with the organisation's strategy and business function 	
	Manage business development activities	<ul style="list-style-type: none"> Establish and maintain a network of key stakeholders and experts in the local intellectual property (IP) community Identify and develop business opportunities for IP practice Maintain the organisation's and/or clients' patent portfolio in accordance with regulatory requirements 	
	Manage impact of emerging trends on patent work	<ul style="list-style-type: none"> Synthesise and provide market and/or industry information to assist decision making for patent portfolio development Provide data-based inputs to determine valuation of potential patent acquisitions 	

The information contained in this document serves as a guide.

Senior Patent Attorney/Senior Patent Agent/ Patent Attorney/Patent Agent

SKILLS AND COMPETENCIES	TECHNICAL SKILLS AND COMPETENCIES		GENERIC SKILLS AND COMPETENCIES (TOP 5)	
		Budgeting	Level 4	Communication
	Business Data Analysis	Level 4	Problem Solving	Advanced
	Business Negotiation	Level 5	Creative Thinking	Advanced
	Business Opportunities Development	Level 4	Interpersonal Skills	Intermediate
	Change Management	Level 5	Leadership	Intermediate
	Data Visualisation	Level 5		
	Intellectual Property Audit and Due Diligence	Level 5		
	Intellectual Property Intelligence	Level 4		
	Intellectual Property Management Processes	Level 5		
	Intellectual Property Portfolio Management	Level 5		
	Learning and Development	Level 5		
	Manpower Forecasting	Level 4		
	Market Research	Level 4		
	Networking	Level 5		
	Organisational Strategy and Policy Realisation	Level 5		
	Patent Claim and Specification Drafting	Level 5, Level 6		
	Patent Office Action and Infringements	Level 5, Level 6		
	Patent Practice	Level 5, Level 6		
	People Change Management	Level 5		
	People and Performance Management	Level 5		
	Vendor Management	Level 4		

Partner/Director/Principal

JOB ROLE DESCRIPTION

The Partner/Director/Principal oversees the organisation's and/or clients' patent strategy and oversees the international and local filing of patents in accordance with regulatory requirements. He/She grows organisation's and/or clients' patent portfolios and provides expert advice on patent-related issues. He oversees matters related to patent infringements and patent litigation, and advises the organisation and/or clients on responses to examiners' written opinions and/or office actions. The Partner/Director/Principal also drives the organisation's business development function by identifying new growth areas for the organisation.

The Partner/Director/Principal oversees a team to ensure that organisational targets and Key Performance Indicators (KPIs) are communicated and achieved. He leads the talent management function for the team and explores new and/or emerging technology to determine its relevance to the organisation in enhancing work processes and increase productivity.

The Partner/Director/Principal has a sound grasp of local and international patent regulatory regimes and is able to provide sound advice when faced with complex scenarios. As an expert in his field, he may be called upon to provide opinions and to share his expertise at public forums.

CRITICAL WORK FUNCTIONS AND KEY TASKS	CRITICAL WORK FUNCTIONS	KEY TASKS
	Manage patent submissions	<ul style="list-style-type: none"> • Oversee the organisation's and/or clients' patent strategy • Provide advice on the international filing of patents to organisations and/or clients • Oversee invention disclosures and interviews with inventors • Advise on patent and intellectual property (IP)-related issues that arise in connection with mergers and acquisitions (M&A), commercial licensing and partnerships • Maintain oversight and supervision on matters concerning prior art searches • Ensure patentability requirements for applications drafted are met and aligned with legal and regulatory requirements • Oversee patent submissions to regulatory authorities
	Manage patent amendments	<ul style="list-style-type: none"> • Review examiners' written opinions or office actions to determine next steps • Oversee filing of appeals in compliance with regulatory requirements • Oversee patent amendments and re-submissions to regulatory authorities
	Provide advice on patent infringements and validity	<ul style="list-style-type: none"> • Oversee patent infringement and validity assessments • Collaborate with key stakeholders in patent-related litigation • Maintain oversight on patent litigation matters to ensure strategy and costs are in line with expectations and budgetary requirements

The information contained in this document serves as a guide.

Partner/Director/Principal

CRITICAL WORK FUNCTIONS AND KEY TASKS	CRITICAL WORK FUNCTIONS	KEY TASKS
	<p>Manage people and organisational function</p>	<ul style="list-style-type: none"> • Develop initiatives to support the continuing competence and professional development of the team • Drive a culture of continuous improvement and innovation • Establish long-term objectives for the talent management function in alignment with the organisation's strategy • Mentor current and future organisation leaders through collaborative leadership practices and career discussions • Drive performance management practices within the department in accordance with organisational policies and procedures • Establish the budget, manpower and resourcing strategies and plans to support the organisation's strategy • Communicate performance indicators and implement supporting policies to facilitate the performance of the organisation
	<p>Manage business development activities</p>	<ul style="list-style-type: none"> • Provide subject matter expertise on patent-related issues within the organisation and at public forums • Cultivate business and professional networks internationally • Formulate the organisation's business development strategies and negotiation limits • Build the organisation's or clients' patent portfolios • Formulate IP business solutions and strategies
<p>Manage impact of emerging trends on patent work</p>	<ul style="list-style-type: none"> • Explore methods to leverage on IP intelligence to enhance the organisation's patent strategy • Explore new developments in the area of IP analytics and intelligence strategies for the organisation • Build new capabilities for patent search and analytics functions • Monitor developments to explore new technology and/or analytics functions to enhance productivity and workflow 	

Partner/Director/Principal

SKILLS AND COMPETENCIES	TECHNICAL SKILLS AND COMPETENCIES		GENERIC SKILLS AND COMPETENCIES (TOP 5)	
		Budgeting	Level 5	Communication
	Business Data Analysis	Level 5	Leadership	Advanced
	Business Negotiation	Level 6	Decision Making	Advanced
	Business Opportunities Development	Level 5	Resource Management	Advanced
	Change Management	Level 6	Problem Solving	Advanced
	Intellectual Property Audit and Due Diligence	Level 6		
	Intellectual Property Intelligence	Level 5		
	Intellectual Property Management Processes	Level 6		
	Intellectual Property Portfolio Management	Level 6		
	Learning and Development	Level 6		
	Manpower Forecasting	Level 5		
	Market Research	Level 5		
	Networking	Level 6		
	Organisational Strategy and Policy Realisation	Level 6		
	Patent Claim and Specification Drafting	Level 6		
	Patent Office Action and Infringements	Level 6		
	Patent Practice	Level 6		
	People Change Management	Level 6		
	People and Performance Management	Level 6		
	Vendor Management	Level 5		

The information contained in this document serves as a guide.

IP Strategy



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Head of IP Value and Strategy

Justin Fun
Amadeus

MAKING IP WORK BEST FOR A COMPANY'S STRATEGIC THRUSTS

The intellectual property (IP) sector is full of potential, says Mr Justin Fun, Head of IP Value and Strategy at leading technology company, Amadeus. With over 12 years of experience in the IP sector, Justin started out as a Patent Attorney and has since progressed to take on a larger responsibility of crafting IP strategies to support the business direction of his company. The economy, he observes, has shifted in tandem – it has become increasingly knowledge-based and Asia has emerged as a significant region for IP creation.

This, coupled with the growth of the start-up and tech scene in Singapore, has fuelled awareness about IP. It is no longer just the big, technology-related multi-national corporations (MNCs) that prioritise IP, smaller businesses are also jumping on the bandwagon to reap the benefits that IP brings.

With these changes, there are more job opportunities in the sector. Justin also notes that there are more initiatives and career support provided as the government promotes IP as a core asset of business. The Skills Framework for IP is one example.

“The Skills Framework for IP has helped to establish a clearer view of the IP career pathways. The career map and skills map aim to provide a clear direction on the progression and expectations of various job roles in the IP sector,” Justin explains.

“Aspiring entrants to the IP sector should build a solid foundation in law, technical skills and business concepts.”

The Skills Framework was developed with contributions from experts in the IP sector, he says. Many of them, like him, can empathise with the challenges new entrants to the sector face. These IP experts also have the foresight to understand how the sector is changing and are clear about the skills that are valued. Knowing these expectations will better prepare those entering or moving within the IP sector.

In addition to referring to this Skills Framework, Justin also advises aspiring entrants to the IP sector to build a solid foundation in law, technical skills and business concepts. Across his journey, in growing towards his role now as an IP Strategist, he has found that one must be able to move from merely understanding how IP functions, to becoming adept at making IP work best for a company's strategic thrusts.

It is an exciting time for those in the IP sector, he reiterates, emphasising that success will come to those who are willing to constantly learn. Ultimately, with the landscape rapidly changing, he says, “The sector seeks those who are able to flexibly adapt to changes, and can even help forge change in the future”.

IP Director/IP Strategist

JOB ROLE DESCRIPTION

The Intellectual Property Director/Intellectual Property Strategist is responsible for developing and managing the implementation of overall intellectual property (IP) strategies and policies for the organisation. He/She oversees the management of the organisation's entire IP portfolio and advises senior management and/or clients on risks and opportunities regarding IP assets. He drives technology transfer activities and manages complex technology transfer projects with large budgets in complex circumstances.

He is able to synthesise information from different fields to extrapolate trends and conclusions that may have a strategic impact on the organisation. He also manages and evaluates the organisation's risk exposure while taking the lead in innovation and growth management in bringing new ideas to the market. He is also on the constant lookout for new technologies to enhance productivity and generate new insights.

He has an in-depth knowledge of the architecture underpinning innovations and its potential. He has a global mindset and stays abreast of global innovation and trends to be able to interpret its impact on the organisation. He has deep knowledge of IP and emerging technology and innovation trends. He possesses strong leadership and management skills and is an excellent negotiator in complex scenarios. He mentors a team and advocates best practices and adherence to regulatory and legislative guidelines.

CRITICAL WORK FUNCTIONS AND KEY TASKS	CRITICAL WORK FUNCTIONS	KEY TASKS
	Drive intellectual property (IP) and commercialisation strategies	<ul style="list-style-type: none"> • Formulate the organisation's IP strategies, objectives and Key Performance Indicators (KPIs) to optimise business impact • Advise inventors on commercialisation requirements and pathways for new technologies and/or inventions • Define technology transfer strategies for the introduction of new inventions and/or innovations • Advise on legal aspects of knowledge transfer, including IP, compliance and business contractual matters • Establish the organisation's risk management strategies and appetite • Review emerging trends and intelligence, and analyse technology landscape reports and analyses to identify potential IP opportunities • Formulate advisory requirements for commercialisation and IP strategies for technologies
	Manage the organisation's IP portfolio and intangible assets	<ul style="list-style-type: none"> • Formulate strategies to manage and review the organisation's IP portfolios and intangible assets • Oversee the development of patent monetisation, IP licensing and investment programmes to develop high-value IP asset portfolios • Advise senior management on IP-related opportunities and risks regarding IP assets • Oversee systems and processes to facilitate prior art searches, IP infringements and enforcement actions

IP Director/IP Strategist

CRITICAL WORK FUNCTIONS AND KEY TASKS	CRITICAL WORK FUNCTIONS	KEY TASKS
		Manage business development activities
	Manage people and organisational function	<ul style="list-style-type: none"> • Develop initiatives to support the continuing competence and professional development of staff • Drive a culture of continuous improvement and innovation • Establish long-term objectives for the talent management function in alignment with organisational strategies • Mentor current and future organisation leaders through collaborative leadership practices and career discussions • Drive performance management practices within the department in accordance with organisational policies and procedures • Establish the budget, manpower and resourcing strategies and plans to support organisational strategies • Communicate performance indicators and implement supporting policies to facilitate the performance of the organisation

SKILLS AND COMPETENCIES	TECHNICAL SKILLS AND COMPETENCIES		GENERIC SKILLS AND COMPETENCIES (TOP 5)	
		Budgeting	Level 5	Leadership
	Business Data Analysis	Level 5	Decision Making	Advanced
	Business Environment Analysis	Level 6	Communication	Advanced
	Business Negotiation	Level 6	Interpersonal Skills	Advanced
	Business Opportunities Development	Level 5	Problem Solving	Advanced
	Business Risk Management	Level 6		
	Change Management	Level 6		
	Contracts and Agreements	Level 5		
	Copyright Protection	Level 6		
	Innovation Management	Level 6		
	Intellectual Property Audit and Due Diligence	Level 6		

The information contained in this document serves as a guide.

IP Director/IP Strategist

SKILLS AND COMPETENCIES	TECHNICAL SKILLS AND COMPETENCIES	
	Intellectual Property Commercialisation and Exploitation	Level 6
	Intellectual Property Enforcement	Level 5
	Intellectual Property Licensing	Level 5
	Intellectual Property Management Processes	Level 6
	Intellectual Property Monetisation	Level 6
	Intellectual Property Portfolio Management	Level 6
	Intellectual Property in Research and Development	Level 5
	Intellectual Property Strategy	Level 6
	Learning and Development	Level 5
	Manpower Forecasting	Level 5
	Market Entry Strategy Formulation	Level 5
	Market Research	Level 5
	Networking	Level 6
	Organisational Strategy and Policy Realisation	Level 6
	Patent Claim and Specification Drafting	Level 6
	Patent Practice	Level 6
	People Change Management	Level 6
	People and Performance Management	Level 6
	Project Management	Level 6
	Project Risk Management	Level 5
	Registered Design Application	Level 6
	Technology Assessment	Level 6
	Technology Incubation	Level 5
	Technology Transfer	Level 5
	Trade Mark Application	Level 6
	Vendor Management	Level 5

IP Management



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IP Manager

Dr Joanna Choo
NTUitive Pte Ltd

PUSHING THE FRONTIERS OF SCIENCE THROUGH IP MANAGEMENT

Those passionate about the sciences and keen on contributing to the field, can find a fruitful career in the intellectual property (IP) sector, says Dr Joanna Choo. She firmly believes that IP management is an integral part of the research and development (R&D) industry. "Without effective IP management, there will be no incentive for innovation, because people's hard work cannot be effectively protected from theft and plagiarism."

After eight years of research in the field of biomedical sciences, Joanna's impetus for a career shift came while she was doing her PhD. One of her research projects had a breakthrough which prompted the

university to apply for a patent. The process of applying for this patent enlightened Joanna as to how IP protection and IP management are crucial to R&D – in fact, "no less important than the research itself".

As an IP Manager at NTUitive, Joanna is responsible for handling the IP portfolio of NTU's life science-related and biotechnological inventions. In comparison to her previous job in research, work is now more dynamic, giving her exposure to different technical fields and allowing her to work with both researchers and IP legal counsels from local and foreign entities.

The career change was daunting, Joanna admits, largely because she lacked formal training in IP management. Despite a mentorship system and on-the-job-training regime to support her, Joanna felt the need to take on IP law-related courses to speed up her growth.

Joanna was awarded the SkillsFuture Study Award for Intellectual Property sector (SFSA-IP) which offset her course fees for the Graduate Certificate in Intellectual Property Law (GCIP) programme.

"Initiatives like the SFSA-IP enable professionals like me to move closer to my career aspiration of being a highly-skilled specialist," she recalls, adding that the award went beyond monetary support, to also motivate and encourage her. This is because she saw her employer's support in nominating her for the award as a sign of her company's confidence in her abilities.

Their faith was not misplaced. Joanna completed the course in 2018 and describes herself as being more confident and better-positioned to support her clients now.

"Those with a background in science and engineering should consider a career in IP", Joanna reiterates. Many in her role are from these fields and are valued for their technical expertise. Although the work straddles the fields of science and IP law, she recommends those interested in IP to refer to the Skills Framework for IP. "The Skills Framework provides a comprehensive overview and clarity of what each job function entails and the requirements for it" she explains.

With the Skills Framework, "An individual can analyse if the job is suitable, and then successfully plan how to close the competency gaps," she concludes.

" IP protection and management are crucial to research and development – they are no less important than the research itself."

Senior IP Paralegal/IP Management Associate

JOB ROLE DESCRIPTION

The Senior Intellectual Property Paralegal/Intellectual Property Management Associate is responsible for supporting the implementation of the organisation's intellectual property (IP) plans and maintaining IP processes based on established policies. He/She oversees the organisation's IP portfolio management activities by analysing and organising information pertaining to IP portfolios to maximise and optimise business value, while ensuring compliance to IP-related legislation and guidelines.

The Senior IP Paralegal/IP Management Associate also prepares budgetary reports for management's update and computes expenses for billing purposes. He stays updated on the latest changes in legislative and regulatory requirements and ensures that all IP applications comply with the same. He monitors the team's achievement of Key Performance Indicators (KPIs) and facilitates continuous improvement and innovation activities within the team.

The Senior IP Paralegal/IP Management Associate possesses strong oral and written communication skills, and the ability to work independently. He is meticulous and is able to multi-task with competing priorities while maintaining oversight over large volumes of work.

CRITICAL WORK FUNCTIONS AND KEY TASKS	CRITICAL WORK FUNCTIONS	KEY TASKS
	Manage intellectual property (IP) strategies, processes and procedures	<ul style="list-style-type: none"> • Implement IP processes and procedures to support the organisation's IP strategies and highlight gaps for management's consideration • Oversee IP applications to ensure compliance to timelines and requirements • Keep abreast of IP-related developments, research, legislative and regulatory changes • Analyse data to determine products and/or classes which may conflict with the IP being registered • Liaise with external vendors in the preparation and finalisation of IP valuation reports • Ensure compliance to IP legislation and guidelines
	Oversee the organisation's IP portfolio and intangible assets	<ul style="list-style-type: none"> • Conduct analysis of IP portfolios to optimise and maximise value • Manage the organisation's international IP portfolio, and legal docket's maintenance and procedures • Track and analyse IP portfolio performance to identify areas for improvement • Assist in conducting IP due diligence • Conduct prior art searches to determine new IP applications and/or identify potential IP infringements • Assist in drafting contracts relating to research services, and commercialisation and transfer of the resulting IP
	Support business development activities	<ul style="list-style-type: none"> • Implement strategies to leverage on relationships and network for business opportunities and partnerships • Maintain collaborative relationships with industry and clients • Collate information on relevant market and industry trends affecting the marketplace • Assist in negotiations and follow up on negotiation outcomes

The information contained in this document serves as a guide.

Senior IP Paralegal/IP Management Associate

CRITICAL WORK FUNCTIONS AND KEY TASKS

CRITICAL WORK FUNCTIONS

Contribute to organisational function and strategies

KEY TASKS

- Compute statement of expenses for billing purposes
- Provide inputs for budget planning
- Monitor and prepare budget reports and updates
- Facilitate continuous improvement and innovation initiatives
- Monitor team's performance and achievement of Key Performance Indicators (KPIs)

SKILLS AND COMPETENCIES

TECHNICAL SKILLS AND COMPETENCIES

Budgeting	Level 3
Business Data Analysis	Level 3
Business Negotiation	Level 4
Change Management	Level 4
Contracts and Agreements	Level 4
Data Visualisation	Level 4
Innovation Management	Level 4
Intellectual Property Audit and Due Diligence	Level 4
Intellectual Property in Business	Level 4
Intellectual Property Enforcement	Level 4
Intellectual Property Intelligence	Level 4
Intellectual Property Management Processes	Level 4
Intellectual Property Portfolio Management	Level 4
Intellectual Property in Research and Development	Level 4
Learning and Development	Level 4
Networking	Level 4
Organisational Strategy and Policy Realisation	Level 4
Patent Practice	Level 4
People Change Management	Level 4
People and Performance Management	Level 4
Project Management	Level 4
Registered Design Application	Level 4
Trade Mark Application	Level 4
Vendor Management	Level 3

GENERIC SKILLS AND COMPETENCIES (TOP 5)

Teamwork	Basic
Problem Solving	Basic
Communication	Basic
Interpersonal Skills	Intermediate
Digital Literacy	Intermediate

The information contained in this document serves as a guide.

Senior IP Manager/IP Manager

JOB ROLE DESCRIPTION

The Senior Intellectual Property Manager/Intellectual Property Manager develops the organisation's intellectual property (IP) strategies and policies to manage the organisation's IP portfolio and intangible assets. He/She oversees the organisation's international IP portfolio and conducts analysis on current and past filings to inform management of potential IP infringements. He also manages assigned IP portfolios and provides relevant inputs on IP-related opportunities and risks across business units. He supports business development activities by providing advice and inputs on relevant IP issues and due diligence activities.

The Senior IP Manager/IP Manager is expected to keep abreast of international legislative and regulatory requirements pertaining to IP and is expected to assess its potential impact on the organisation's IP portfolio, processes and procedures. He also manages the talent development initiatives for the team, and motivates them to achieve the Key Performance Indicators (KPIs). He manages the budget and resource allocation for the team and prepares inputs for forward planning.

The Senior IP Manager/IP Manager possesses strong interpersonal skills and business acumen, and is able to lead multiple projects simultaneously. He is detail-oriented and takes initiative and proactive steps to ensure the organisation's compliance to IP legislation and guidelines. He works well with both internal and external key stakeholders.

CRITICAL WORK FUNCTIONS AND KEY TASKS	CRITICAL WORK FUNCTIONS	KEY TASKS
	Manage intellectual property (IP) strategies, processes and procedures	<ul style="list-style-type: none"> • Develop IP policies and procedures to support organisation's IP strategies • Provide inputs to facilitate the refinement of IP strategies, policies and procedures • Monitor past and ongoing IP prosecutions and litigations involving competitors • Oversee IP valuation submissions • Keep abreast of changes in IP-related international legislation and cross-jurisdictional regulations • Assess the impact of changes in IP legislation and guidelines
	Oversee the organisation's IP portfolio and intangible assets	<ul style="list-style-type: none"> • Oversee IP portfolios related to complex inventions and/or innovations • Review findings from the evaluation of the IP portfolio to optimise and maximise value of the organisation's IP portfolio • Manage the organisation's international IP portfolios and intangible assets • Analyse IP-related opportunities and risks to formulate recommendations • Execute legal advice on viability of enforcement actions on IP infringements • Manage monitoring and compliance requirements of contracts related to IP
	Manage business development activities	<ul style="list-style-type: none"> • Evaluate strategies to leverage relationships and network for business opportunities and partnerships • Oversee the preparation and conduct of market research for negotiations • Lead the negotiations relating to IP contracts and agreements

The information contained in this document serves as a guide.

Senior IP Manager/IP Manager

CRITICAL WORK FUNCTIONS AND KEY TASKS	CRITICAL WORK FUNCTIONS	KEY TASKS
	Manage people and organisational function	

SKILLS AND COMPETENCIES	TECHNICAL SKILLS AND COMPETENCIES		GENERIC SKILLS AND COMPETENCIES (TOP 5)	
	Budgeting	Level 4	Problem Solving	Advanced
Business Data Analysis	Level 4	Decision Making	Intermediate	
Business Negotiation	Level 5	Communication	Intermediate	
Change Management	Level 5	Sense Making	Intermediate	
Contracts and Agreements	Level 5	Interpersonal Skills	Advanced	
Copyright Protection	Level 5			
Data Visualisation	Level 5			
Intellectual Property Audit and Due Diligence	Level 5			
Intellectual Property in Business	Level 5			
Intellectual Property Enforcement	Level 5			
Intellectual Property Intelligence	Level 5			
Intellectual Property Management Processes	Level 5			
Intellectual Property Portfolio Management	Level 5			
Intellectual Property Strategy	Level 5			
Learning and Development	Level 5			
Manpower Forecasting	Level 4			
Networking	Level 5			
Organisational Strategy and Policy Realisation	Level 5			

The information contained in this document serves as a guide.

Senior IP Manager/IP Manager

SKILLS AND COMPETENCIES	TECHNICAL SKILLS AND COMPETENCIES	
	Patent Practice	Level 5
	People Change Management	Level 5
	People and Performance Management	Level 5
	Project Management	Level 4
	Registered Design Application	Level 5
	Trade Mark Application	Level 5
	Vendor Management	Level 4

IP Commercialisation



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IP Analyst

Janelle Tan
FT Consulting Pte Ltd

THE ART OF MANAGING IP

Listening to Intellectual Property (IP) Analyst, Janelle Tan, share her passion for the IP industry, one would never guess she had “fallen into the sector”. Yet, she describes her entry as accidental – she had been working as a brand executive at a fashion company, when a friend referred her for a branding role at her current company, FT Consulting Pte Ltd.

It was only while conducting research, interviews and field visits to help businesses uncover IP assets that her interest bloomed. “I noticed that IP is all around us and that it cuts through different industries in varying degrees – that’s the interesting part,” she explains.

“IP management is an art”, Janelle explains. “It takes experience and skill on the IP manager’s part to navigate the laws and help clients extract the highest possible value from their IP assets.”

Developing IP-related skills was initially very difficult for her. She spent a lot of time scouring the internet for resources as IP laws differ from country to country, and the information she acquired about other countries was not always applicable to Singapore.

Realising that she needed to do more to improve her knowledge, she began looking into various courses, and took up the Master of IP and Innovation Management (MIPIM) at the Singapore University of Social Sciences.

“IP is relevant to many industries, and in varying degrees — that’s what makes it interesting.”

As Janelle was in the first year of her IP career, she also qualified for the Professional Conversion Programme for Intellectual Property Professionals (IP-PCP), which provided her company with a course fee grant and salary support.

Janelle found the MIPIM to be helpful for new entrants like herself to assimilate better into the IP industry. She said, “The MIPIM made learning and acquiring IP-related skills seamless as it covered all aspects of IP.”

She credits the foundation module in law for developing her fundamentals in the IP legal area, while the class on advanced patent laws enhanced her understanding of how patents are managed, applied for and granted in Singapore. She also enjoys being able to apply what she has been taught, almost immediately at work.

The next career milestone for Janelle will be to graduate. She is excited about the future, and looks forward to developing a fulfilling career in the IP field. “The Skills Framework will be helpful as it provides me with an idea of the path ahead, and enables me to understand the skills I need to advance,” she says.

IP Commercialisation Associate/ IP Commercialisation Analyst

JOB ROLE DESCRIPTION

The Intellectual Property Commercialisation Associate/Intellectual Property Commercialisation Analyst assumes the responsibility of supporting technology transfer, development and commercialisation activities. He/She conducts research and collates relevant information to support business development and marketing activities, and drives discussions with relevant stakeholders.

He also prepares budgetary reports for management and computes expenses for billing purposes. He stays updated on the latest changes in legislative and regulatory requirements and ensures that all intellectual property (IP) applications comply with the same. He has some insight into the commercial viability of technology and the business environment, as well as the value of IP and legal issues concerning commercialisation.

He possesses strong oral and written communication skills, with the ability to work independently. He is meticulous and is able to manage competing priorities while maintaining oversight over large volumes of work. He possesses in-depth knowledge of commonly used IP databases, search engines and information sources to be able to analyse and manage the knowledge retrieved.

	CRITICAL WORK FUNCTIONS	KEY TASKS
CRITICAL WORK FUNCTIONS AND KEY TASKS	Manage intellectual property (IP) strategies, processes and procedures	<ul style="list-style-type: none"> • Implement commercialisation policies and guidelines to achieve Key Performance Indicators (KPIs) • Conduct IP due diligence and landscape analysis to determine new IP for technologies and/or inventions • Develop patent monetisation, IP licensing and investment programmes • Perform preliminary assessments on the patentability of technologies and/or inventions • Identify potential IP commercialisation opportunities for new technologies and/or inventions • Determine sources and availability of funding for commercialisation of new technologies and/or inventions • Gather information on potential commercialisation requirements and pathways for new IP and technologies
	Support business development activities	<ul style="list-style-type: none"> • Implement strategies to leverage relationships and network for business opportunities and partnerships • Maintain collaborative relationships with industry and existing clients • Conduct research on potential clients and new markets • Assist in negotiation of commercialisation agreements and follow up on outcomes • Work with inventors and business development teams to identify commercialisation opportunities • Collate information on relevant market and industry trends affecting the marketplace
	Contribute to organisational function and strategies	<ul style="list-style-type: none"> • Monitor and prepare budget reports and updates • Facilitate continuous improvement and innovation initiatives • Monitor the team's performance and achievement of KPIs • Provide inputs for budget planning

The information contained in this document serves as a guide.

IP Commercialisation Associate/ IP Commercialisation Analyst

CRITICAL WORK FUNCTIONS AND KEY TASKS

CRITICAL WORK FUNCTIONS

Manage projects and stakeholders

KEY TASKS

- Plan project timelines and resources needed
- Deliver projects in line with agreed standards, providing fit-for-purpose solutions within time, quality and budget constraints
- Monitor resource usage to ensure adherence to resource allocation plans
- Prepare and communicate project status updates to stakeholders
- Ensure adherence to budget allocation and spending limits for projects
- Identify and/or pre-empt project risks

SKILLS AND COMPETENCIES

TECHNICAL SKILLS AND COMPETENCIES

Budgeting	Level 3
Business Data Analysis	Level 3
Business Environment Analysis	Level 4
Business Negotiation	Level 4
Business Opportunities Development	Level 3
Business Presentation Delivery	Level 4
Business Risk Management	Level 4
Change Management	Level 4
Contracts and Agreements	Level 4
Data Visualisation	Level 4
Innovation Management	Level 4
Intellectual Property Audit and Due Diligence	Level 4
Intellectual Property Commercialisation and Exploitation	Level 4
Intellectual Property Intelligence	Level 4
Intellectual Property Licensing	Level 4
Intellectual Property Monetisation	Level 4
Intellectual Property in Research and Development	Level 4
Learning and Development	Level 4
Market Entry Strategy Formulation	Level 4
Market Research	Level 3
Networking	Level 4

GENERIC SKILLS AND COMPETENCIES (TOP 5)

Problem Solving	Intermediate
Teamwork	Intermediate
Interpersonal Skills	Intermediate
Service Orientation	Intermediate
Sense Making	Basic

IP Commercialisation Associate/ IP Commercialisation Analyst

SKILLS AND COMPETENCIES	TECHNICAL SKILLS AND COMPETENCIES	
	Organisational Strategy and Policy Realisation	Level 4
	People Change Management	Level 4
	Project Management	Level 4
	Project Risk Management	Level 3
	People and Performance Management	Level 3
	Technology Incubation	Level 4
	Technology Transfer	Level 4

Senior IP Consultant/Senior IP Commercialisation Manager/IP Consultant/IP Commercialisation Manager

JOB ROLE DESCRIPTION

The Senior Intellectual Property Consultant/Senior Intellectual Property Commercialisation Manager/Intellectual Property Consultant/Intellectual Property Commercialisation Manager facilitates the technology transfer, development and commercialisation of assigned technologies activities. He/She provides guidance regarding relevant technology transfer issues, including developing and interpreting policies and represents the organisation's interest in intellectual property (IP) and technology transfer to external organisations. He establishes new commercialisation agreements and business development relationships with key internal and external stakeholders.

He has sound knowledge and insight into IP rights, licensing, legislation, and practical and commercial implications of legal issues concerning technology transfer and business development. He plays a key role in identifying potential partners and sources of funding and shaping the business model to facilitate technology transfer.

He possesses excellent interpersonal and organisational skills, and the ability to engage with individuals from technical, legal and research backgrounds. He also possesses a strong business acumen, with proven leadership in technology transfer activities. He builds and manages relationships with key stakeholders or networks.

CRITICAL WORK FUNCTIONS AND KEY TASKS	CRITICAL WORK FUNCTIONS	KEY TASKS
	Manage intellectual property (IP) strategies, processes and procedures	<ul style="list-style-type: none"> • Develop commercialisation policies, guidelines and plans for the introduction of commercialisation requirements and pathways for new IP and technologies • Oversee the preparation of reports on the Return on Investment (ROI) of IP portfolios • Oversee the creation, application and assignment of IP legal rights • Evaluate the effectiveness of patent monetisation, IP licensing and investment programmes • Evaluate IP intelligence and landscape to determine market potential for new IP for technologies and/or inventions • Evaluate IP commercialisation opportunities for new technologies and/or inventions • Assess the viability and patentability of technologies and/or inventions • Provide inputs on commercialisation requirements and pathways for new IP for technologies and/or inventions • Review and evaluate IP-related valuations to facilitate decision making on commercialisation opportunities
	Manage business development activities	<ul style="list-style-type: none"> • Evaluate strategies to leverage relationships and network for business opportunities and partnerships • Engage inventors and business development team to identify commercialisation opportunities • Facilitate the development of collaborative relationships with industry to develop research partnerships • Lead negotiations of commercialisation agreements, IP contracts and agreements • Review IP market trends and intelligence • Oversee the preparation and conduct of market research for negotiations

The information contained in this document serves as a guide.

Senior IP Consultant/Senior IP Commercialisation Manager/IP Consultant/IP Commercialisation Manager

CRITICAL WORK FUNCTIONS AND KEY TASKS	CRITICAL WORK FUNCTIONS	KEY TASKS
	Manage people and organisational function	<ul style="list-style-type: none"> • Manage continuous professional development activities • Provide on-the job training and coaching for staff • Develop frameworks and processes to facilitate continuous improvement and innovation initiatives • Set individual objectives and review and assess performance of staff • Manage budget and resource allocation for the function's activities • Provide inputs for manpower allocation based on department needs • Develop workplans and targets in line with the organisation's strategies and business functions
	Manage projects and stakeholders	<ul style="list-style-type: none"> • Oversee the development of project and resource allocation plans • Execute profit and loss balancing to maximise revenue while achieving intended outcomes • Conduct cost-benefit analysis of proposed projects • Propose re-allocation of resources to meet project requirements • Develop project risk management procedures and workflows in accordance with the organisation's project risk policies and mitigation strategies

SKILLS AND COMPETENCIES	TECHNICAL SKILLS AND COMPETENCIES		GENERIC SKILLS AND COMPETENCIES (TOP 5)	
	Budgeting	Level 4	Interpersonal Skills	Advanced
Business Data Analysis	Level 4	Communication	Advanced	
Business Environment Analysis	Level 5	Problem Solving	Intermediate	
Business Negotiation	Level 5	Sense Making	Intermediate	
Business Opportunities Development	Level 4	Decision Making	Intermediate	
Business Presentation Delivery	Level 5			
Business Risk Management	Level 5			
Change Management	Level 5			
Contracts and Agreements	Level 5			
Data Visualisation	Level 5			
Innovation Management	Level 5			
Intellectual Property Audit and Due Diligence	Level 5			
Intellectual Property Commercialisation and Exploitation	Level 5			
Intellectual Property Intelligence	Level 5			
Intellectual Property Licensing	Level 5			
Intellectual Property Monetisation	Level 5			

The information contained in this document serves as a guide.

Senior IP Consultant/Senior IP Commercialisation Manager/IP Consultant/IP Commercialisation Manager

SKILLS AND COMPETENCIES	TECHNICAL SKILLS AND COMPETENCIES	
	Intellectual Property in Research and Development	Level 5
	Learning and Development	Level 5
	Manpower Forecasting	Level 4
	Market Entry Strategy Formulation	Level 4
	Market Research	Level 4
	Networking	Level 5
	Organisational Strategy and Policy Realisation	Level 5
	People Change Management	Level 5
	People and Performance Management	Level 5
	Project Management	Level 5
	Project Risk Management	Level 4
	Technology Assessment	Level 5
	Technology Incubation	Level 5
	Technology Transfer	Level 5

Overview of Technical Skills and Competencies

Technical Skills and Competencies (TSCs)

TSC Category	TSC Title	TSC Description	Proficiency Levels					
			1	2	3	4	5	6
Business Development	Business Environment Analysis	Analyse data pertaining to the business landscape and environment, including competitor-analysis			●	●	●	●
	Business Negotiation	Conduct negotiations to establish win-win outcomes for the organisation			●	●	●	●
	Business Opportunities Development	Identification of new business opportunities, this could be new markets, new partnerships, new ways to reach existing markets, or new product or service offerings to better meet the needs of existing markets and to ensure that these work in an integrated fashion and bring benefits to the organisation	●	●	●	●		
	Business Presentation Delivery	Perform required tasks to prepare and present information in various business settings involving preparation, understanding of audience, delivery and tailoring of messages to be conveyed			●	●	●	
	Market Entry Strategy Formulation	Develop strategic plans to enter identified markets based on assessed costs, benefits and risks involved				●	●	●
	Market Research	Formulate market research frameworks, as well as develop market research study objectives, market research plans and methodologies to analyse market trends and developments to forecast emerging market needs		●	●	●	●	
	Networking	Identify and establish industry stakeholder relationships at all levels of business operations to further the organisation's strategies and objectives			●	●	●	●
General Management	Budgeting	Prepare organisational budgets to support short- and long-term business plans through forecasting, allocation and financial policy setting			●	●	●	
	Business Data Analysis	Implement data analytics within the organisation to generate business insights and intelligence through the use of statistical and computational techniques and tools, algorithms, predictive data modelling and data visualisation	●	●	●	●		
	Business Risk Management	Forecast and assess existing and potential risks which impact the operation and/or profitability to the business as well as develop and roll out company-wide strategies and processes to mitigate risks, minimise their impact or effectively manage such business risks			●	●	●	●
	Change Management	Drive and facilitate change management processes within the organisation which includes innovation and continuous improvement			●	●	●	●
	Data Visualisation	Implement contemporary techniques, dynamic visual displays with illustrative and interactive graphics to present patterns, trends, analytical insights from data or new concepts in a strategic manner for the intended audience			●	●	●	
	Innovation Management	Integrate creativity and innovation into the design and development of products and processes while ensuring compliance and non-infringement of existing Intellectual Property (IP) regulations and patents rights				●	●	●
	Organisational Strategy and Policy Realisation	Make management decisions to establish, review and refine strategic organisational objectives and policies through collation and analysis of relevant organisational and business information			●	●	●	●

Overview of Technical Skills and Competencies

Technical Skills and Competencies (TSCs)

TSC Category	TSC Title	TSC Description	Proficiency Levels					
			1	2	3	4	5	6
General Management	Project Management	Execute projects by managing stakeholder engagement, resources, budgets and resolving problems			●	●	●	●
	Project Risk Management	Manage risks relating to specific projects as precaution against internal and external vulnerabilities			●	●	●	
	Vendor Management	Manage vendor relationships by ensuring performance as per contracts, operations within standards established by the organisation such as adherence to safety, security, and compliance standards			●	●	●	
Intellectual Property Management	Contracts and Agreements	Analyse and manage intellectual property contracts and agreements				●	●	
	Copyright Protection	Apply knowledge of copyright law to support the organisation					●	●
	Intellectual Property Audit and Due Diligence	Apply and evaluate due diligence in intellectual property asset transactions				●	●	●
	Intellectual Property in Business	Evaluate business significance of intellectual property			●	●	●	
	Intellectual Property Commercialisation and Exploitation	Develop and execute intellectual property marketing and/or exploitation strategies				●	●	●
	Intellectual Property Enforcement	Manage and evaluate effectiveness of enforcement procedures				●	●	
	Intellectual Property Intelligence	Analyse prior art searches to evaluate intellectual property intelligence				●	●	
	Intellectual Property Licensing	Execute and manage intellectual property licensing strategies			●	●	●	
	Intellectual Property Management Processes	Monitor and maintain intellectual property processes and establish intellectual property policies and tactics			●	●	●	●
	Intellectual Property Monetisation	Analyse intellectual property-related taxation and valuation reports, and determine financing structure for intellectual property				●	●	●
	Intellectual Property Portfolio Management	Maintain, manage and develop the organisation's intellectual property portfolio			●	●	●	●
	Intellectual Property in Research and Development	Apply intellectual property practices in research and development				●	●	
	Intellectual Property Strategy	Define and evaluate the organisation's intellectual property-related strategies and portfolios					●	●
	Patent Claim and Specification Drafting	Interpret the anatomy of a patent document, define the inventive concept, draft claims and determine the patentability of inventive concepts			●	●	●	●
	Patent Office Action and Infringements	Handle patent written opinions and/or office actions, and infringements and invalidity					●	●
	Patent Practice	Handle patent practices and manage patent-related issues to support the organisation				●	●	●
	Registered Design Application	Prepare and review registered design applications			●	●	●	●
	Technology Assessment	Evaluate patentability and commercial value of technical disclosures					●	●

Overview of Technical Skills and Competencies

Technical Skills and Competencies (TSCs)

TSC Category	TSC Title	TSC Description	Proficiency Levels					
			1	2	3	4	5	6
Intellectual Property Management	Technology Incubation	Analyse technology and innovation incubation opportunities, and manage technology incubation				●	●	
	Technology Transfer	Monitor, support and evaluate the organisation's technology transfer activities				●	●	
	Trade Mark Application	Prepare and review trade mark applications			●	●	●	●
People Management	Learning and Development	Manage employees' learning and development activities to maximise employee' potential and capabilities to contribute to the organisation				●	●	●
	Manpower Forecasting	Estimate and fulfil manpower requirements to achieve business goals and targets			●	●	●	
	People Change Management	Drive and facilitate change management processes within the organisation which includes innovation and continuous improvement			●	●	●	●
	People and Performance Management	Establish and implement performance management and remuneration strategies in the organisation to drive business results			●	●	●	●

Overview of Technical Skills and Competencies

General Descriptors for Technical Skills and Competencies (TSCs)

Level	Responsibility (Degree of supervision and accountability)	Autonomy (Degree of decision-making)	Complexity (Degree of difficulty of situations and tasks)	Knowledge and Abilities (Required to support work as described under Responsibility, Autonomy and Complexity)
6	Accountable for significant area of work, strategy or overall direction	Empower to chart direction and practices within and outside of work (including professional field/community), to achieve/ exceed work results	Complex	<ul style="list-style-type: none"> • Synthesise knowledge issues in a field of work and the interface between different fields, and create new forms of knowledge • Employ advanced skills, to solve critical problems and formulate new structures, and/or to redefine existing knowledge or professional practice • Demonstrate exemplary ability to innovate, and formulate ideas and structures
5	Accountable for achieving assigned objectives, decisions made by self and others	Provide leadership to achieve desired work results; Manage resources, set milestones and drive work	Complex	<ul style="list-style-type: none"> • Evaluate factual and advanced conceptual knowledge within a field of work, involving critical understanding of theories and principles • Select and apply an advanced range of cognitive and technical skills, demonstrating mastery and innovation, to devise solutions to solve complex and unpredictable problems in a specialised field of work • Manage and drive complex work activities
4	Work under broad direction Hold accountability for performance of self and others	Exercise judgment; Adapt and influence to achieve work performance	Less routine	<ul style="list-style-type: none"> • Evaluate and develop factual and conceptual knowledge within a field of work • Select and apply a range of cognitive and technical skills to solve non-routine/abstract problems • Manage work activities which may be unpredictable • Facilitate the implementation of innovation
3	Work under broad direction May hold some accountability for performance of others, in addition to self	Use discretion in identifying and responding to issues, work with others and contribute to work performance	Less routine	<ul style="list-style-type: none"> • Apply relevant procedural and conceptual knowledge and skills to perform differentiated work activities and manage changes • Able to collaborate with others to identify value-adding opportunities
2	Work with some supervision Accountable for a broader set of tasks assigned	Use limited discretion in resolving issues or enquiries. Work without frequently looking to others for guidance	Routine	<ul style="list-style-type: none"> • Understand and apply factual and procedural knowledge in a field of work • Apply basic cognitive and technical skills to carry out defined tasks and to solve routine problems using simple procedures and tools • Present ideas and improve work
1	Work under direct supervision Accountable for tasks assigned	Minimal discretion required. Expected to seek guidance	Routine	<ul style="list-style-type: none"> • Recall factual and procedural knowledge • Apply basic skills to carry out defined tasks • Identify opportunities for minor adjustments to work tasks

Overview of Generic Skills and Competencies

Generic Skills and Competencies (GSCs)

GSC	GSC Description	Proficiency Levels		
		Basic	Intermediate	Advanced
Communication	Convey and exchange thoughts, ideas and information effectively through various mediums and approaches.	Communicate information with others to respond to general inquiries and to obtain specific information.	Articulate and discuss ideas and persuade others to achieve common outcomes.	Negotiate with others to address issues and achieve mutual consensus.
Computational Thinking	Develop and use computational models, tools and techniques to interpret and understand data, solve problems and guide decision-making.	Use computational models, tools and techniques to identify patterns in a problem and develop a solution.	Modify existing computational models, tools and techniques to develop different solutions.	Develop and create computational models, tools and techniques to implement new solutions and apply to other problems.
Creative Thinking	Adopt a fresh perspective to combine ideas or information in new ways and make connections between seemingly unrelated fields to create new ideas and applications.	Connect ideas or information from related fields or applications to address an immediate issue.	Connect or combine ideas or information from unrelated fields or applications to generate multiple ideas to bring about a specific outcome.	Create original applications or ideas to reveal new possibilities and reshape goals through high level of innovativeness.
Decision Making	Choose a course of action from various alternatives using a reasoned process to achieve intended goals.	Make decisions of simple or routine nature to achieve intended goals using given information and guidelines.	Make decisions in a complex setting to achieve intended goals using a structured process and multiple sources of available information.	Make decisions in a volatile and ambiguous setting using a structured process and limited sources of available information to achieve intended goals.
Developing People	Help others to learn and develop their capabilities to enhance their performance and achieve personal or professional goals.	Use demonstration and explanation to teach a familiar task to inexperienced co-workers.	Provide coaching to others to develop their skills and knowledge on their jobs to enhance performance.	Provide mentorship to help others in their professional and personal development to improve performance and further their careers.
Digital Literacy	Use ICT tools, equipment and software to create, evaluate and share information digitally with others.	Perform basic functions using software programmes pertaining to computer operating systems and file management, and search online information.	Use available software features to create and edit documents, customise templates and reports and evaluate online information.	Use available software features to enhance documents, analyse and manipulate data, and use ICT to organise, share and communicate information clearly and coherently.
Global Mindset	Awareness of diversity across global cultures and markets. Seek opportunities to adopt successful practices and ideas.	Demonstrate understanding of global challenges and opportunities and how to transfer best practices across cultures. Respect cultural differences and needs of a diverse workforce.	Develop global networks and manage virtual relationships while balancing both local and global perspectives. Adopt a local and global perspective when making decisions.	Build the organisation's capabilities to compete in a global environment. Manage tension between corporate requirements, global and cultural differences.

Overview of Generic Skills and Competencies

Generic Skills and Competencies (GSCs)

GSC	GSC Description	Proficiency Levels		
		Basic	Intermediate	Advanced
Interpersonal Skills	Manage relationships efficiently and communicate with others effectively to achieve mutual consensus and outcomes.	Recognise own internal feelings and emotional states to manage interpersonal relationships in social situations.	Detect and decipher emotions of others to manage interpersonal relationships in social situations.	Influence, guide and handle others' emotions to build instrumental relationships and manage conflicts and disagreements.
Leadership	Lead others to achieve objectives in the most effective way. Provide an inclusive workplace that cultivates workplace relationships and teamwork, and foster the development of others.	Demonstrate professionalism to set a good example at peer level. Support others through own initiative and enthuse others through own positive and energetic approach.	Lead by example at team level. Encourage and guide others to adopt a point of view, make changes or take action. Provide a team environment that facilitates relationships building, teamwork and the development of others.	Lead by example at organisational level. Inspire, motivate and guide others to adopt a point of view, make changes or take action. Cultivate an open, cooperative and collaborative learning culture for the organisation.
Lifelong Learning	Seek out opportunities to enhance one's knowledge and skills. Access and acquire new knowledge and skills actively for continual learning.	Organise and manage own learning by setting learning targets. Identify learning approaches to achieve work or career goals.	Engage in collaborative learning by discussing one's learning with others and soliciting feedback to continually improve oneself.	Conduct self-reflective practices to review one's learning to facilitate continual growth in one's career or profession.
Managing Diversity	Work well with people from different ethnic, social, cultural and educational backgrounds and understand the concerns and interests of diverse work groups.	Demonstrate sensitivity to the cultural characteristics, values, beliefs, and behaviors of another ethnic or cultural group.	Build relationships with different ethnic or cultural groups by engaging in cross-cultural cooperative projects.	Manage conflicts arising from different ethnic or cultural groups and work effectively in cross-cultural settings.
Problem Solving	Generate feasible and efficient solutions to solve problems and capitalise on new opportunities.	Identify easily perceivable problems and follow given guidelines and procedures to solve the problems.	Identify less perceivable problems and use problem solving tools and techniques to solve the problems.	Anticipate potential problems beyond the current scope and apply higher order problem solving tools and techniques to turn problems into opportunities.
Resource Management	Efficient and effective deployment and allocation of resources when and where they are needed. Include planning, allocating and scheduling of resources to tasks, which typically include manpower, machines, money and materials.	Use resources to ensure optimum and efficient use of resources.	Deepen insights into the planning, allocation and deployment of resources to anticipate needs. Plan the allocation and deployment of resources efficiently and effectively.	Establish strategies for the allocation and deployment of resources efficiently and effectively.

Overview of Generic Skills and Competencies

Generic Skills and Competencies (GSCs)

GSC	GSC Description	Proficiency Levels		
		Basic	Intermediate	Advanced
Sense Making	Organise and analyse data and information accurately to identify relationships and detect patterns and trends to gain insights for decision making.	Identify relationships and linkages within different components of data.	Interpret data to uncover patterns and trends between various sources of data.	Analyse data relationships, patterns and trends to gain important insights and make informed decisions.
Service Orientation	Commit to exceeding both internal and external customers' needs. Proactively identify customer needs and sustain a culture of service excellence within the organisation.	Exceed customer needs and expectations and handle service challenges with a positive mindset. Demonstrate an understanding of the organisation's service vision, mission and values.	Anticipate customer needs and expectations and elicit feedback from customers to improve service. Build relationships with customers to create and sustain customer loyalty.	Model, lead, train and motivate staff with a focus on sustaining a culture that encourages commitment to service excellence and high performance.
Teamwork	Work collaboratively and effectively with others to contribute to group efforts to achieve identified objectives.	Contribute to a positive and cooperative working environment by fulfilling own responsibilities and providing support to co-workers to achieve team goals.	Facilitate work team activities, provide assistance and support needed by team members and promote ownership and commitment among team members to work goals to improve team performance.	Establish teams, design and assess tasks to continually improve team effectiveness and cultivate a sense of organisational ownership and a cooperative working environment.
Transdisciplinary Thinking	Understanding of concepts across multiple disciplines, with the capacity to synthesise the knowledge and insights to guide decisions and foster cooperation.	Research and adapt concepts from outside one's field of expertise to supplement one's core knowledge and proficiency.	Co-relate material from diverse knowledge bases to guide decisions and policy making. Participate in reflective and trans-disciplinary communities within and outside the organisation.	Synthesise knowledge and insights across disciplinary boundaries to aid strategic decisions and foster cooperation within and outside of the organisation.
Virtual Collaboration	Use online collaborative communication tools to work as teams to accomplish tasks or projects.	Participate and contribute in a virtual team. Set up appropriate online collaborative tools and supporting equipment.	Use interactive collaborative tools to foster cohesion and commitment among virtual team members to achieve goals. Keep up-to-date with innovative online collaborative tools and applications to enhance one's proficiency in engaging in virtual collaboration.	Leverage on diverse team talent, latest online collaborative technologies and virtual platforms to produce collaborative behaviour and achieve technological savviness in virtual collaboration.

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Wage Information

TRACKS	SUB-TRACKS	JOB ROLES	INDICATIVE MONTHLY SALARY
IP Legal	-	Partner/Director/Counsel	\$13,980 - \$20,574
Patents Prosecution	-	Partner/Director/Principal	
IP Strategy	-	IP Director/IP Strategist	
IP Legal	-	Senior IP Legal Associate/IP Legal Associate	\$7,557 - \$12,624
		IP Paralegal/IP Executive	\$2,663 - \$4,684
Patents Prosecution	-	Senior Patent Attorney/Senior Patent Agent/ Patent Attorney/Patent Agent	\$6,755 - \$11,955
		Patent Attorney Trainee/Patent Agent Trainee	\$4,800 - \$5,750
IP Strategy	IP Management	Senior IP Manager/IP Manager	\$6,060 - \$9,200
		Senior IP Paralegal/IP Management Associate	\$3,358 - \$5,081
	IP Commercialisation	Senior IP Consultant / Senior IP Commercialisation Manager/ IP Consultant/IP Commercialisation Manager	\$6,822 - \$11,513
		IP Commercialisation Associate/ IP Commercialisation Analyst	\$3,408 - \$5,485

Source: Wage Survey 2018 conducted by Ernst & Young Advisory Pte Ltd commissioned by SkillsFuture Singapore.

* The above data reflects the indicative monthly gross salary and includes overtime pay and allowances. Actual salaries may differ due to market conditions and company/organisation policies.

SKILLS FRAMEWORK FOR INTELLECTUAL PROPERTY (IP) Career Pathways



* Please refer to the Intellectual Property Office of Singapore website at www.ipos.gov.sg/ip-careers/careers-in-ip

The Career Map serves as a reference to reflect the available job roles and possible career pathways in the Intellectual Property Sector, which may vary depending on each organisation's structure and business context. The career progression pathways would depend on individual performance, capability, experience, aspiration, as well as organisation needs.

SKILLS FRAMEWORK FOR INTELLECTUAL PROPERTY Career Pathways



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